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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/945,265	08/31/2001	Timothy A. Springer	CBN-002CP	1985

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EXAMINER
HADDAD, MAHER M

ART UNIT	PAPER NUMBER
1644	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/945,265	Applicant(s) SPRINGER ET AL.
	Examiner Maher M. Haddad	Art Unit 1644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 February 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *25-31 and 73-82* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *25-31 and 73-82* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a)☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4)☐ Interview Summary (PTO-413) Paper No(s). _____ .
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: .

RESPONSE TO APPLICANT'S AMENDMENT

1. Applicant's amendment, filed 2/21/03 (Paper No. 13), is acknowledged.

2. Claims 25-31 and 73-82 are pending and under consideration.

3. The following new grounds of rejections are necessitated by the amendment filed on 2/21/03, paper No. 13.

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:
The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 25-31 and 73-78, 80 and 82 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a New Matter rejection.

The phrase "a recombinant antibody" claimed in claim 25, line 1, the phrase "a recombinant anti-LFA-1 antibody" claimed in claim 30, line 1, and the phrase "human antibody" claimed in claim 76, line 2, represent a departure from the specification and the claims as originally filed.

Applicant's amendment filed 2/21/03 points to the specification for support for the newly added limitations "a recombinant antibody", "a recombinant anti-LFA-1 antibody" and "human antibody" as claimed in claims 25, 30 and 76 respectively. However, the specification does not provide a clear support of "a recombinant antibody", "a recombinant anti-LFA-1 antibody" and "human antibody". The instant claims now recite limitations which were not clearly disclosed in the specification and claims as originally filed.

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:
A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 79, 81-82 are rejected under 35 U.S.C. 102(b) as being anticipated by Huang *et al* (Proc. Natl. Acad. Sci. 94:3162-3167, 1997), as is evidenced by Lu *et al* (Proc Natl Acad Sci 98:2393-2398, 2002) and the specification on page 76, lines 7-8 and page 77, Table 6.

Huang *et al* teach five monoclonal antibodies BL5, F8.8, May.035, TS1/22 and TS2/6 which selectively bind to an integrin I-domain (see page 3163 under mAbs and Cell Lines, and page 3164 Figure 2 in particular). Those antibodies bind to specific epitope on the integrin αL subunit of I-domain of LFA-1 integrin (page 3164 Figure 2 in particular). Although Huang *et al* do not teach the specific antibodies bind to a modified I-domain of αL subunit containing amino acid substitution E284C/E301C, wherein the modified integrin polypeptide is stabilized in the open conformation. These limitations are considered an inherent property of the reference antibodies.

As is evidenced by Lu *et al*, that antibodies against αL I domain of LFA-1, BL5, F8.8, May.035, TS1/22 and TS2/6 bind to the open or "active" mutants K287C/K294C of αL subunit of LFA-1 "modified I domain" (see Table 1 page 2394 in particular).

Further, as is evidenced by the specification on page 76, lines 7-8 and page 77, Table 6 that the affinity of E284C/E301C mutant is nearly comparable to K287C/K294C mutant affinity (e.g. predicted open conformation binds with high affinity).

Since the office does not have a laboratory to test the reference antibodies, it is applicant's burden to show that the reference antibody does not bind to a modified integrin I –domain in the open conformation and binds to a modified I-domain of an αL subunit containing amino acid substitution E284/E301C recited in the claims. See In re Best, 195 USPQ 430, 433 (CCPA 1977); In re Marosi, 218 USPQ 289, 292-293 (Fed. Cir. 1983); and In re Fitzgerald et al., 205 USPQ 594 (CCPA 1980).

The reference teachings anticipate the claimed invention.

Applicant's arguments, filed 2/21/03 (Paper No. 13), have been fully considered, but have not been found convincing.

Applicant argues that Huang *et al* fail to teach each and every limitation of the pending claims. Applicant asserts that Huang et al describe the use of mouse anti-human monoclonal antibodies for research purposes.

Contrary to applicant assertion, the intended uses do not carry patentable weight per se and the claims read on the active or essential ingredients that is the antibodies.

Applicant argues that Huang *et al* do not teach or suggest antibodies which selectively bind to modified LFA-I domain proteins which contain the specific amino acid sustitutions E284/E301C, as claimed in claim 79.

However, the antibodies taught by Huang et al selectively bind to an integrin I-domain (see page 3163 under mAbs and Cell Lines, and page 3164 Figure 2 in particular). Those antibodies bind to specific epitope on the integrin αL subunit of I-domain of LFA-1 integrin. Further, as is evidenced by Lu *et al*, that antibodies against αL I domain of LFA-1, BL5, F8.8, May.035, TS1/22 and TS2/6 bind to the open or "active" mutants K287C/K294C of αL subunit of LFA-1 "modified I domain" (see Table 1 page 2394 in particular). Further, the specification on page 76, lines 7-8 and page 77, table 6, teaches that the both E284/E301C and K287C/K294C have open conformation which binds with high affinity. Therefore, binding to E284/E301C substitution is considered an inherent property of the reference antibodies.

Further, when a claim recites using an old composition or structure (e.g. BL5, F8.8, May.035, TS1/22 and TS2/6 antibodies) and the use is directed to a result or property of that composition or structure (binding I-domain in the open conformation), then the claim is anticipated. See MPEP 2112.02. Also, see Bristol-Myers Squibb Co. v. Ben Venue Laboratories, Inc. 58 USPQ2d 1508 (CA FC 2001); Ex parte Novitski 26 USPQ 1389 (BPAI 1993); Mehl/Biophile International Corp. V. Milgraum, 52 USPQ2d 1303 (Fed. Cir. 1999); Atlas Powder Co. V. IRECO, 51 USPQ2d 1943 (Fed. Cir. 1999).

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> *(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.*

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 25-27, 29-31, 73-78, 80 and 82 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang *et al* (Proc. Natl. Acad. Sci. 94:3162-3167, 1997), as is evidenced by Lu *et al* (Proc. Natl. Acad. Sci. 98:2393-2398, 2002) in view of U.S. Patent No. 5,843,712.

The teachings of Huang *et al* and Lu *et al* cited as an evidentiary reference have been discussed, supra. Further, although Huang *et al* do not teach the specific antibodies bind to a modified integrin I-domain in the open conformation, the antibodies bind to an activation specific epitope (I domain) on the integrin, the antibodies blocks an interaction between an integrins and a cognate ligand, wherein said modified I-domain of an αL subunit contains amino acid substitutions K287C/K294C or E284C/E301C and wherein modified LFA-1 I-domain contains amino acid substitutions K287C/K294C or E284C/E301C, all these limitations are considered an inherent property of the reference antibodies.

As is evidenced by Li *et al*, that antibodies against αL I domain of LFA-1, BL5, F8.8, May.035, TS1/22 and TS2/6 bind to the open or "active" mutants K287C/K294C of αL subunit of LFA-1 "modified I domain" (see Table 1 page 2394 in particular). Furthermore, Lu *et al* teach that BL5, F8.8, May.035, TS1/22 and TS2/6 antibodies strongly inhibited binding of both wild-type and mutant K287C/K294C of αL subunit of LFA-1 (page 2395, Table 2 in particular).

The claimed invention differs from the reference teachings only by the recitation of a recombinant antibody, a human antibody in claim 76, a humanized antibody in claim 77, and a chimeric antibody in claim 78.

The `712 patent teaches that the expression of recombinant antibodies in mammalian cells offers great advantages with respect to post-translational modifications, stability, immunogenicity, and yields (see column 1, lines 40-45 in particular), wherein Sindbis virus vectors offer a powerful tool for the rapid production of genetically engineered antibodies (column 1m lines 1, lines 48-56 in particular). The `712 patent further teaches that the Sindbis virus vector system can be useful to produce recombinant antibodies that replace immunoglobulin therapies that are presently being used in the treatment of certain inflammatory disorders, immunodeficiency states, and viral infections. The advantages of such recombinant antibodies (versus serum immunoglobulin therapy MAbs derived from mouse hybridoma cells) would be that they can easily be humanized. Further these antibodies can be custom designed to modify their specificity, and produced in very large quantities (see column 16, lines 8-16 in particular). Finally, the `712 patent teaches that the Sindbis virus vector system can easily be adapted to produce chimeric, humanized or human antibodies. The feasibility of producing high yields of humanized biologically active antibodies suggests that the Sindbis virus vector system can be useful for the generation of therapeutic antibodies. Results demonstrate that an antibody produced using the Sindbis virus vector system is able to protect mice against a lethal infection of the central nervous system (see column 15 lines 66-67 and column 16 lines 1-8 in particular).

Claim 80 is included because antibody is antibody irrespective of how it's made.

It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to produce the antibodies taught by Huang *et al* recombinantly, chimeric, humanized or human taught by the `712 patent.

One of ordinary skill in the art at the time the invention was made would have been motivated to do so because the recombinant antibody offers great advantages with respect to post-translational modifications, stability, immunogenicity, and yields as taught by the `712 patent. Further, chimeric, humanized are human antibodies can be useful for the as therapeutic antibodies as taught by the `712 patent.

From the combined teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expection of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

Applicant's arguments, filed 2/21/03 (Paper No. 13), have been fully considered, but have not been found convincing.

Applicant argues that Huang *et al* fail to teach each and every limitation of the pending claims. Applicant asserts that Huang et al describe the use of mouse anti-human monoclonal antibodies for research purposes.

Contrary to applicant assertion, the intended uses do not carry patentable weight per se and the claims read on the active or essential ingredients that is the antibodies.

Applicant argues that Huang *et al* do not teach or suggest antibodies which selectively bind to modified LFA-I domain proteins which contain the specific amino acid sustitutions E284/E301C, as claimed in claim 79.

However, the antibodies taught by Huang et al selectively bind to an integrin I-domain (see page 3163 under mAbs and Cell Lines, and page 3164 Figure 2 in particular). Those antibodies bind to specific epitope on the integrin αL subunit of I-domain of LFA-1 integrin. Further, as is evidenced by Lu *et al*, that antibodies against αL I domain of LFA-1, BL5, F8.8, May.035, TS1/22 and TS2/6 bind to the open or "active" mutants K287C/K294C of αL subunit of LFA-1 "modified I domain" (see Table 1 page 2394 in particular). Further, the specification on page 76, lines 7-8 and page 77, table 6, teaches that the both E284/E301C and K287C/K294C have open conformation which binds with high affinity. Therefore, binding to E284/E301C substitution is considered an inherent property of the reference antibodies.

Further, when a claim recites using an old composition or structure (e.g. BL5, F8.8, May.035, TS1/22 and TS2/6 antibodies) and the use is directed to a result or property of that composition or structure (binding I-domain in the open conformation), then the claim is anticipated. See MPEP 2112.02. Also, see Bristol-Myers Squibb Co. v. Ben Venue

Laboratories, Inc. 58 USPQ2d 1508 (CA FC 2001); Ex parte Novitski 26 USPQ 1389 (BPAI 1993); Mehl/Biophile International Corp. V. Milgraum, 52 USPQ2d 1303 (Fed. Cir. 1999); Atlas Powder Co. V. IRECO, 51 USPQ2d 1943 (Fed. Cir. 1999.

10. Claims 25-27, 29-31, 73-78, 80 and 82 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang *et al* (Proc. Natl. Acad. Sci. 94:3162-3167, 1997), as is evidenced by Lu *et al* (Proc. Natl. Acad. Sci. 98:2393-2398, 2002) in view of U.S. Patent No. 5,843,712 and further in view of Owens *et al* (1994).

The teachings of Huang *et al*, Lu *et al* cited as an evidentiary reference and the `712 patent have been discussed, supra.

The claimed invention differs from the reference teachings only by the recitation of an antigen binding fragment.

Owens *et al* teach the modification of murine antibodies such as a single chain antibody, a Fab fragment, or a $F(ab')_2$ fragment. Owens *et al* further teach antibody fragments are the reagents of choice for some clinical applications (see the entire document).

It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to produce the antibodies taught by Huang *et al* as Fab and $F(ab')_2$ fragments taught by the Owens *et al*.

One of ordinary skill in the art at the time the invention was made would have been motivated to do so because the antibody fragments are the reagents of choice for some clinical applications as taught by Owens *et al*.

From the combined teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expection of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

Applicant's arguments, filed 2/21/03 (Paper No. 13), have been fully considered, but have not been found convincing.

Applicant argues that the prior art references do not teach or suggest all the claim limitations, specifically, Huang et al. fails to teach or suggest the claimed recombinant antibodies. Applicant further argues that Huang et al do not teach or suggest antibodies which selectively bind to modified LFA I-domin proteins which contain amino acid substitutions E284C/E301C. Applicant argues that the Owens et al fail to cure the deficiencies in the teachings of the Huang el al reference.

However, the antibodies taught by Huang et al selectively bind to an integrin I-domain (see page 3163 under mAbs and Cell Lines, and page 3164 Figure 2 in particular). Those antibodies bind to specific epitope on the integrin αL subunit of I-domain of LFA-1 integrin. Further, as is evidenced by Lu *et al*, that antibodies against αL I domain of LFA-1, BL5, F8.8, May.035, TS1/22 and TS2/6 bind to the open or "active" mutants K287C/K294C of αL subunit of LFA-1 "modified I domain" (see Table 1 page 2394 in particular). Further, the specification on page 76, lines 7-8 and page 77, table 6, teaches that the both E284/E301C and K287C/K294C have open conformation which binds with high affinity. Therefore, binding to E284/E301C substitution is considered an inherent property of the reference antibodies.

Further, when a claim recites using an old composition or structure (e.g. BL5, F8.8, May.035, TS1/22 and TS2/6 antibodies) and the use is directed to a result or property of that composition or structure (binding I-domain in the open conformation), then the claim is anticipated. See MPEP 2112.02. Also, see Bristol-Myers Squibb Co. v. Ben Venue Laboratories, Inc. 58 USPQ2d 1508 (CA FC 2001); Ex parte Novitski 26 USPQ 1389 (BPAI 1993); Mehl/Biophile International Corp. V. Milgraum, 52 USPQ2d 1303 (Fed. Cir. 1999); Atlas Powder Co. V. IRECO, 51 USPQ2d 1943 (Fed. Cir. 1999

11. Claim 28 is rejected under 35 U.S.C. 103(a) as being obvious over Huang *et al* (Proc. Natl. Acad. Sci. 94:3162-3167, 1997), as is evidenced by Lu *et al* (Proc. Natl. Acad. Sci. 98:2393-2398, 2002) in view of U.S. Patent No. 5,843,712 and further in view of U.S Patent No. 6,413,963.

The teachings of Huang *et al*, Lu *et al* cited as an evidentiary reference and the `712 patent have been discussed, supra.

The claimed invention differs from the reference teachings only by the recitation of a pharmaceutical composition and a pharmaceutically acceptable carrier.

The `963 patent teaches pharmaceutical compositions prepared comprise a therapeutically effective amount of a compound (e.g. antibody) in a pharmaceutically acceptable carrier. The `963 patent further teaches that therapy with inhibitors of cell adhesion are indicated for any condition in which an excess of integrin-mediated cell adhesion is a contributing factor (see column 18, lines 28-41 and column 20 lines 11-12 in particular).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to prepare the antibodies taught by Huang *et al* reference in a pharmaceutical compositions in a pharmaceutically acceptable carrier taught by the `963 patent.

One of ordinary skill in the art at the time the invention was made would have been motivated to do so because antibody pharmaceutical compositions are used in a therapy

where any condition in which an excess of integrin-mediated cell adhesion is a contributing factor as taught by `963 patent.

From the combined teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

Applicant's arguments, filed 2/21/03 (Paper No. 13), have been fully considered, but have not been found convincing.

Applicant argues that the prior art references do not teach or suggest all the claim limitations, specifically, Huang et al. fails to teach or suggest the claimed recombinant antibodies. Applicant further argues that Huang et al do not teach or suggest antibodies which selectively bind to modified LFA I-domin proteins which contain amino acid substitutions E284C/E301C. Applicant argues that the `963 patent fails to cure the deficiencies in the teachings of the Huang el al reference.

However, the antibodies taught by Huang et al selectively bind to an integrin I-domain (see page 3163 under mAbs and Cell Lines, and page 3164 Figure 2 in particular). Those antibodies bind to specific epitope on the integrin αL subunit of I-domain of LFA-1 integrin. Further, as is evidenced by Lu *et al*, that antibodies against αL I domain of LFA-1, BL5, F8.8, May.035, TS1/22 and TS2/6 bind to the open or "active" mutants K287C/K294C of αL subunit of LFA-1 "modified I domain" (see Table 1 page 2394 in particular). Further, the specification on page 76, lines 7-8 and page 77, table 6, teaches that the both E284/E301C and K287C/K294C have open conformation which binds with high affinity. Therefore, binding to E284/E301C substitution is considered an inherent property of the reference antibodies.

Further, when a claim recites using an old composition or structure (e.g. BL5, F8.8, May.035, TS1/22 and TS2/6 antibodies) and the use is directed to a result or property of that composition or structure (binding I-domain in the open conformation), then the claim is anticipated. See MPEP 2112.02. Also, see Bristol-Myers Squibb Co. v. Ben Venue Laboratories, Inc. 58 USPQ2d 1508 (CA FC 2001); Ex parte Novitski 26 USPQ 1389 (BPAI 1993); Mehl/Biophile International Corp. V. Milgraum, 52 USPQ2d 1303 (Fed. Cir. 1999); Atlas Powder Co. V. IRECO, 51 USPQ2d 1943 (Fed. Cir. 1999

12. No claim allowed

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maher Haddad, whose telephone number is (703) 306-3472. The examiner can normally be reached Monday to Friday from 8:00 to 4:30. A message may be left on the examiner's voice mail service. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Chan can be reached at (703) 308-3973. Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center 1600 receptionist whose telephone number is (703) 308-0196.

Papers related to this application may be submitted to Technology Center 1600 by facsimile transmission. Papers should be faxed to Technology Center 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CM1 Fax Center telephone number is (703) 305-3014.

Maher Haddad, Ph.D.
Patent Examiner
Technology Center 1600
April 7, 2003

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